

FINAL REPORT  
ON THE ASSESSMENT  
OF THE  
GEOGRAPHICAL BSE RISK OF  
COSTA RICA  
MAY 2001

**NOTE TO THE READER**

Independent experts have produced this report, applying an innovative methodology by a complex process to data that were voluntarily supplied by the responsible country authorities. Both, the methodology and the process are described in detail in the final opinion of the SSC on "the Geographical Risk of Bovine Spongiform Encephalopathy (GBR)", 6 July 2000. This opinion is available at the following Internet address:

**<[http://europa.eu.int/comm/food/fs/sc/ssc/outcome\\_en.html](http://europa.eu.int/comm/food/fs/sc/ssc/outcome_en.html)>**

In order to understand the rationale of the report leading to its conclusions and the terminology used in the report, it is highly advisable to have read the opinion before reading the report. The opinion also provides an overview of the assessments for other countries.

## FULL REPORT

### 1. Data

- The available information was suitable to finalise the GBR risk assessment.

#### Sources of data

Country Dossier (CD) consisting of:

- Basic questionnaire for the assessment of the geographical BSE-risk of Costa Rica, received from the embassy of Costa Rica on 21 March 2001.

Other sources:

- EUROSTAT data on exports of "live bovine animals" and of "flour, meal and pellets of meat or offal, unfit for human consumption; greaves", from EU Member States covering the period 1980 to 2000.
- UK-export data on "live bovine animals" (1980-1996) and on "Mammalian Flours, Meals and Pellets", 1980-2000. As it was illegal to export mammalian meat meal, bone meal and MBM from UK since 27/03/1996, exports indicated after that date may have included non-mammalian MBM.

### 2. External Challenges

#### 2.1 Import of cattle from BSE affected countries

Import of live cattle (n/year) into <u>COSTA RICA</u> from BSE-affected countries							
Period	UK			SP		Non-UK	
	CD	EU	UK	CD	EU	CD	EU
80-87:							
88-93:							
1994							
1995							
1996							
1997							
1998					35		35
1999							
94-99:					35		35

**Table 1:** Live Cattle imports. Shading indicates period of different risk that UK-exports carried the agent, 1988-1993 being the period of highest risk.

Sources: CD = Country Dossier, EU = Eurostat, UK = Export data from UK.

- According to the Country Dossier (CD) no imports of live cattle have taken place from UK. This is confirmed by the UK export data of live cattle. Live cattle from other BSE-affected non-UK countries have, according to the CD,

also not been imported into Costa Rica but EUROSTAT data show an export from Spain to Costa Rica in 1998.

## 2.2 Import of MBM or MBM-containing feedstuffs from BSE affected countries

Import of MBM, MM, BM or greaves (t/year) into <u>COSTA RICA</u> from BSE-affected countries							
Period	UK			NL		Non-UK	
Source:	CD	EU	UK	CD	EU	CD	EU
80-85							
86-90							
91-93							
1994							
1995							
1996							
1997							
1998							
1999					4.8		4.8
94-99:					4.8		4.8

**Table 2: MBM-imports. Shading indicates period of different risk that exports carried the agent, 1986-1990 being the period of highest risk for UK imports while 1994-1999 UK-exports are assumed to have been safer than exports from other BSE-affected countries. Sources: CD = Country Dossier, EU = Eurostat, UK = UK-Export statistics.**

- According to the CD, no imports of MBM have taken place from UK or any other non-UK BSE-affected Member State. It was explained that imports of these commodities have never taken place from UK because of legal reasons as stated in the Decree 14584 (Ministry of Agriculture and Livestock); and in the Animal health law 6243. However, no further information is provided on the content of these regulations and what exactly is the basis for not importing MBM in Costa Rica.
- According to the UK and Eurostat export statistics, no MBM has been exported to Costa Rica in the period 1980-1998 but Eurostat recorded one export of 4.8 tons from The Netherlands in 1999 and another of 23.5 tons from Austria in 1995.

## 2.3 Overall assessment of the external challenge

The level of the external challenge that has to be met by the BSE/cattle system is estimated according to the guidance given by the SSC in its final opinion on the GBR of July 2000.

It appears that the challenges resulting both from live cattle and MBM imports have been **negligible** throughout the period under consideration. Even if the import

from Spain of live cattle took place, this import would be assessed as negligible, the same goes for the limited quantity of MBM from the Netherlands.

As long as no evidence is provided of the contrary, it has to be assumed that no external challenge occurred.

<b>External Challenge experienced by <u>COSTA RICA</u></b>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
<b>Period</b>	<b>Level</b>	<b>Cattle imports</b>	<b>MBM imports</b>	<b>Comment</b>
1980 - 1999	<b>Negligible</b>	<b>Negligible</b>	<b>Negligible</b>	

**Table 3: External Challenge resulting from live cattle and/or MBM imports from the UK and other BSE-affected countries. The Challenge level is determined according to the SSC-opinion on the GBR of July 2000.**

On the basis of the available information the overall assessment of the external challenge is as given in the table above. Costa Rica was exposed to a negligible external challenge over the period 1980-99.

### **3. STABILITY**

#### **3.1 Overall appreciation of the ability to avoid recycling of BSE infectivity, should it enter processing.**

##### **Feeding:**

Until 12 February 2001, when an official ban to feed MBM to ruminants has been installed and controls have started, it was legally possible to feed MBM to ruminants and it was common practice.

The annual consumption of MBM by cattle over the last five years was 2,802 tonnes, the average animal protein content in cattle feed was 5.28%. Costa Rica states that all MBM was domestically produced.

Since its installation compliance with the feed ban is controlled by inspection in the feed-mills and specific instructions for processing and storing of animal feed are given. The exclusive use of equipment in the preparation of feed for ruminants, separated storing facilities, periodic feed sampling for composition and residues, checks of labelling etc. are claimed to be possible means of control. Controls are foreseen, but no details are provided as to the sampling or on results.

It is concluded that feeding cattle with MBM, BM, MM or greaves was generally the case until recently (Feb. 2001). Verification of the correct implementation of the feed ban will determine if this parameter is now changed.

**Rendering:**

A rendering industry exists. The annual production over the past 10 years was 4,618 tons per year. It is not clear what were the main market outlets but apparently part of it (about 2,800 tons p.a., see above) was used for cattle feed production.

Raw material includes bovine raw materials but it is not clear whether other materials are rendered at all (such as pigs, poultry). It is assumed that condemned material and ante-mortem condemned animals (including animals that died during transport to the slaughterhouses) are rendered as well.

With regard to rendering processes the information in the Country Dossier is not fully conclusive. Apparently two sets of parameters are used ( $140^{\circ}\text{C}/220^{\text{min}}/4^{\text{bar}}$  and  $120^{\circ}\text{C}/40^{\text{min}}/5^{\text{bar}}$ ). However, it is not clear whether the pressure is applied directly to the rendering material or refers to the steam used for heating the jacket. As a reasonable worst case assumption, the latter is assumed. Therefore, with regard to reducing BSE-infectivity both processes are not equivalent to the  $133^{\circ}\text{C}/20^{\text{min}}/3^{\text{bar}}$ -standard and the ability of the rendering system to reduce incoming BSE-infectivity is judged to be not satisfactory.

**SRM and fallen stock**

There is no SRM-ban. SRM are normally included in the material rendered for feed production.

According to the information provided, fallen stock from pasture is normally not collected and rendered, their fate is however not specified. It is assumed that dead animals are normally either buried, burned or left for consumption by wild carnivores.

**Cross-contamination:**

Before the feed ban of 12/02/2001 cross-contamination was no issue because MBM was voluntarily and regularly included into cattle feed.

According to the available information the following measures are now (since 12/2/01) put in place to reduce cross-contamination of cattle feed with ruminant protein:

- In the feed mills: checks on labelling and sampling. No information on sampling plans and results have been provided nor on the kind of feed mills that exist in Costa Rica.
- Measures are taken to transport cattle feed separately from other feed.
- Farmers are informed since through publicity campaigns not to use MBM in cattle feed anymore.

At present the efficiency of these measures cannot be judged.

### Conclusion on the ability to avoid recycling

In light of the above-discussed information it has to be assumed that the BSE agent, should it have entered the territory of Costa Rica, would have been recycled and potentially amplified.

### **3.2 Overall appreciation of the ability to identify BSE-cases and to eliminate animals at risk of being infected before they are processed.**

#### Cattle population structure

There is a cattle population of about 700,000 cattle over 24 months of age, no further details were made available.

#### Surveillance and culling

Notification is compulsory since 12 February 2001.

No description is given of the criteria for a BSE-suspect.

Awareness / training measures are said to be in place since 1998, but no details are provided. Since 7/2000 lab personnel is trained in Germany in histopathology of the central nervous system and histopathology is used to verify BSE-suspects. Confirmation of the initial diagnosis will be requested in Germany by histochemistry. Until present no samples needed to be confirmed.

No compensation is foreseen.

Ninety domestic cattle have been examined in 1999. In 2000, 13 samples of domestic BSE-suspects were examined. None were found BSE positive and the differential diagnosis was rabies, listeriosis, viral infections or intoxication. Additionally, random sampling of bovines over 24 months in slaughterhouses will be carried out but no further information was provided.

On the basis of the available information it is concluded that until very recently no formal BSE-surveillance existed in Costa Rica and that it is highly unlikely that small numbers of BSE-cases could have been discovered. With the recent measures the surveillance is somewhat improved but still insufficient.

### **3.3 Overall assessment of the stability**

For the overall assessment of the stability the impact of the three main stability factors and of the additional stability factors, mainly cross-contamination and surveillance plus culling, has to be estimated. Again the guidance provided by the SSC in its opinion on the GBR of July 2000 is applied.

**Feeding:** Feeding MBM to cattle was legally possible and generally the case until February 2001. The available information on the control of the feed-ban does not allow judging the efficiency of this recent feed ban and it is hence assumed that feeding was and is "not OK".

**Rendering:** Rendering is and was common practice in Costa Rica. Material includes ruminant material, including SRM but excluding on-farm fallen stock. It

is assumed that the processes used were and are not adequate for reducing BSE-infectivity. Therefore rendering is "not OK" throughout the reference period.

**SRM-removal:** There is no SRM ban and SRM are normally rendered. Therefore SRM removal was "not OK" throughout the reference period.

**Other stability factors:** Cross contamination was not an issue until the recent installation of the feed ban and BSE surveillance is found to be inefficient. The "other factors" therefore always reduced the stability and still do so.

Stability of the BSE/cattle system in <u>COSTA RICA</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM	Other*
1980-2000	Extremely Unstable	Not OK	Not OK	Not OK	

**Table 4: Stability resulting from the interaction of the three main stability factors and the other stability factors. The Stability level is determined according to the SSC-opinion on the GBR of July 2000.**

On the basis of the available information it has to be concluded that the country's BSE/cattle system was and is extremely unstable. In view of the currently installed feed ban, the stability of the system may increase, pending the outcome of the controls.

#### **4. Conclusion on the resulting risks**

##### **4.1 Interaction of stability and challenges**

The conclusion on the stability of the Costa Rican BSE/cattle system over time and on the external challenges the system had to cope with are summarised in the table below. From the interaction of the two parameters "stability" and "external challenge" a conclusion is drawn on the level of "internal challenge" that emerged and that had to be met by the system, in addition to external challenges that occurred.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN <u>COSTA RICA</u>			
Stability		External Challenge	Internal challenge
Period	Level	Level	
1980 - at current	Extremely Unstable	Negligible	Highly unlikely to be present

**Table 5: Internal challenge resulting from the interaction of the external challenge and stability. The internal challenge level is determined according to guidance given in the SSC-opinion on the GBR of July 2000.**

The extremely unstable BSE/cattle system of Costa Rica was exposed to a negligible external challenge and it is therefore highly unlikely that an internal challenge ever emerged or is currently present.

The fact that the external challenges were negligible implies that the risk that the BSE-agent was imported into the country can be neglected. However, in view of the extremely unstable system any BSE-infectivity that would have entered cattle feed in Costa Rica would have started the vicious cycle that would have lead to recycling and fast amplification of the agent.

#### **4.2 Risk that BSE infectivity entered processing**

Given the fact that the BSE-agent was most likely not imported into the country, a risk that BSE infectivity entered processing never arose.

#### **4.3 Risk that BSE infectivity was recycled and propagated**

As the risk that BSE-infectivity ever entered processing, the risk that it was recycled and amplified is negligible.

However, given the fact that the system was and is extremely unstable, any BSE infectivity that enters processing would most probably be recycled via cattle feed and quickly amplified.

### **5. Conclusion on the Geographical BSE-Risk**

#### **5.1 The current GBR as function of the past stability and challenge**

- The current geographical BSE-risk (GBR) level is *I*, *i.e. it is highly unlikely* that domestic cattle are (clinically or pre-clinically) infected with the BSE-agent.

*Note: In view of the extremely unstable system, this assessment is fully depending on the negligible external challenge.*

#### **5.2 The expected development of the GBR as a function of the past and present stability and challenge**

- As long as no external challenge occurs in the future, the GBR remains unchanged.
- In view of the extremely unstable system, however, any non-negligible external challenge would lead to an increase of the GBR.

#### **5.3 Recommendations for influencing the future GBR**

- In order to ensure that the GBR would not increase, it is recommended to take measures to increase the stability of the system. By avoiding MBM being fed to cattle (effective implementation of the 12/02/2001 feed ban) but also by as far as feasible excluding SRM from entering the feed cycle, the stability of the system would improve. A verification of the rendering processes in order to make sure that they effectively would reduce BSE-infectivity would also be useful.
- Improving the surveillance, e.g. by introducing other diagnostic methods than histopathology, and additional training and awareness raising measures would enhance the certainty that BSE is absent from the territory of Costa Rica.